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CLAIMS

1. A breeding system for use in an open air environment for a number of animals and comprising

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a) means for automatic and electronic registration of data for the individual animals,

b) means for controlled and individually regularly feeding of the animals based on the recorded data of each animal,

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c) an open-air field area wherein the means a) and b) are arranged,

d) means for recording the registered data of each animal in a registration unit,

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e) optionally a facility for slaughtering the animals,

f) optionally at least one device for containing water, a so-called "mud-hole" optionally connected to a waste treatment plant.

20 2. A breeding system according to claim 1, wherein the open-air field is enclosed by a fence.

a 3. A breeding system according to claim 1 ~~or 2~~, further comprising means for automatically identifying each of the individual animals.

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a 4. A breeding system according to ^{claim 1} ~~any of claims 1-3~~, further comprising means for automatically separating and/or isolating an identified animal from one or more of the other animals.

30 5. A breeding system according to claim 4 wherein the means for separation and/or isolation is integrated with the feeding means.

a 6. A breeding system according to ^{claim 1} ~~any of the preceding claims~~ further comprising at least one hut for the animals.

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7. A breeding system according to claim 6 wherein the hut is movable.

8. A breeding system according to any of claims 6-7 wherein the hut is substantially enclosed.

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a 9. A breeding system according to ^{claim 1} ~~any of claim 6-8~~, wherein the hut for the animals is adapted according to the sex, age and number of animals for which the hut is providing shelter.

10. A breeding system according to ^{claim 1} ~~any of the preceding~~ claims wherein the animals are pigs.

11. A breeding system according to claim 10 wherein the pigs are porkers of at least an age of 28 days.

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a 12. A breeding system according to ^{claims 6-10} ~~any of claims 6-10~~, wherein the hut for the animals is a farrowing hut for pigs adapted for farrowing, the farrowing hut comprising at least one sow retainer and at least one piglet shelter.

20 13. A breeding system according to ^{claim 6}~~any of claims 6-10~~, wherein the hut for the animals is
a family hut for pigs adapted for housing at least one sow with piglets of the age up to
about 3-8 weeks, the hut being divided into at least two parts, one part allowing the piglets
to be separated from another part housing the sow or sows, the separation being by
means of e.g. a separating sheet with an opening having such dimensions that the sows,
25 but not the piglets, are prevented from passing through the opening.

a 14. A breeding system according to ^{claim 4} ~~any of claims 4-13~~, wherein the means for feeding the animal is by use of a transponder-feeder and the means for separating and/or isolating the animals comprises an inlet door and an outlet door and optionally a gate between the inlet and outlet doors preventing the animal from leaving through the inlet door.

a 15. A breeding system according to ^{claim 1} ~~any of the preceding claims~~, wherein the means for automatically identifying an individual animal comprises a mark or a label connected to the animal, the mark or label comprising and/or obtaining information which is
35 automatically registered by the registration unit.

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16. A breeding system according to claim 15, wherein the means for automatically identifying an individual animal comprises a mark or a label connected to the animal, the mark or label comprising and/or obtaining information which is send to the registration
5 unit.

a 17. A breeding system according to ^{claim 1}~~any of the preceding claims~~, wherein the means for automatically identifying an individual animal comprises a label or a mark fastened on the animal, such as on the ear.

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9 18. A breeding system according to ^{claim 1}~~any of claims 15-17~~, wherein the registration unit is activated by the presence of the animal bearing the mark when the animal is located in or
a is entering feeding means ~~such as the one described in claim 14~~.

a 15 19. A breeding system according to ^{claim 1}~~any of the preceding claims~~, wherein the means for controlled feeding of the animal is electronically connected with the means for automatically identifying the individual animal.

20. A breeding system according to claim 19, wherein the means for controlled feeding of
20 the animal automatically provides an identified animal with a specific amount and/or mixture of feed based on the identification of the animal.

21. A breeding system according to claim 20 and comprising means for determining the weight of identified animals, wherein the specific amount and/or mixture of feed is
25 determined in response to the weight of the identified animal.

a 22. A breeding system according to ^{claim 1}~~any of the preceding claims~~, wherein the means for controlled feeding of the animal automatically recognise whether the individual animal is provided with a specific amount of feed within a predetermined period of time.

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a 23. A breeding system according to ^{claim 1}~~any of claims 1-22~~, wherein the means for automatically separating and/or isolating an identified animal from one or more of the other animals is a separation unit comprising an inlet door for an animal entering the unit and means for directing the animal towards one of at least two outlet doors.

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24. A breeding system according to claim 23, wherein the means for directing the animal toward one of the outlets doors comprises a turnable fence.

a 25. A breeding system according to claim 23 or 24, wherein the means for directing the animal toward one of the outlets doors is driven automatically.

a 26. A breeding system according to ^{claim 23} ~~any of claims 23-29~~, wherein the means for directing the animal toward one of the outlets doors is driven automatically based on one or more information concerning weight, body temperature, thickness of the fat layer on the back of the animal, feed consumption and identification of the individual animal.

a 27. A breeding system according to ^{claim 4} ~~any of claims 4-26~~, wherein the means for automatically separating and/or isolating an identified animal from one or more of the other animals, the separation being integrated with the feeding means, is located within the movable hut.

a 28. A breeding system according to ^{claim 1} ~~any of the preceding claims~~ further comprising one or more means selected from means for measuring the weight of an identified animal, means for controlling the content/degree of subcutaneous fat on selected areas of an identified animal, and means for controlling body temperature of an identified animal.

a 29. A breeding system according to ^{claim 1} ~~any of the preceding claims~~ further comprising means for registering any possible medical or other treatment with respect to any of dosage, time and type of treatment.

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a 30. A breeding system according to ^{claim 7} ~~any of claims 7-29~~, wherein the movable hut is substantially provided with isolated shelter walls or has an insulating property of less than 0.6 W/m².

a 31. A breeding system according to ^{claim 6} ~~any of claims 6-30~~, wherein the hut further comprises means for ventilation.

a 32. A breeding system according to ^{claim 6} ~~any of claims 6-31~~, wherein the hut is placed directly on the ground.

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claim 1

a 33. A breeding system according to ~~any of claims 1-9~~, wherein the animals are sheep.

claim 1

a 34. A breeding system according to ~~any of the preceding claims~~ comprising a mud-hole arranged on the field so that the animals leaving the shelter will enter the mud-hole on
5 their way to the means for controlled feeding of the animals.

35. A breeding system according to claim 34 wherein the mud-hole has such dimensions that it may contain at least one of said animals and having a design so that said animals are able to enter and leave the mud-hole, the mud-hole being substantially isolated in its
10 lower part from the field with a barrier so as to substantially prevent substances contained in the mud-hole from leaking to the environment.

claim 1

a 36. A breeding system according to ~~any of the preceding claims~~ comprising a mud-hole with draining means for discharging parts of the contents of the mud-hole, the system
15 further comprising connecting means, such as a pipe or a tube, connected to the draining means for leading the discharged part from the mud-hole.

37. A breeding system according to claim 36 comprising a mud-hole connected to a waste-water treatment system, such as a natural reedbed, wherein the waste-water
20 treatment system is connected to the mud-hole through the draining means for receiving the discharged part from the mud-hole.

claim 1

a 38. A breeding system according to ~~any of the preceding claims~~ comprising a mud-hole with means for adding liquid to the mud-hole.

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claim 1

a 39. A breeding system according to ~~any of the preceding claims~~ comprising a mud-hole which is movable.

40. A breeding system according to claim 39, wherein the movable mud-hole is placed on
30 the field without removing the field material or digging holes and in such a way that the surface of the field is substantially protected from damage from the mud-hole or from the animals entering the mud-hole.

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claim 2

a 41. A breeding system according to ~~any of claims 2-40~~ comprising facilities for slaughtering the animals positioned within or in close proximity to the fenced-in open air field area.

claim 1

a 5 42. A breeding system according to ~~any of the preceding claims~~ comprising facilities for slaughtering the animals positioned at a distance to the place where the animals are living so that the time period for transportation of the animals from their living place to the facilities by ordinary transportation means, such as by a truck, does not exceed 30 min. including loading and unloading the animals onto and off the transportation means.

claim 1

a 43. A breeding system according to ~~any of the preceding claims~~ comprising facilities for slaughtering the animals wherein the facilities comprises means for collecting the waste from the slaughtering facilities.

claim 1

a 15 44. A breeding system according to ~~any of the preceding claims~~ further comprising means for detecting and selecting and animal ready for slaughtering

claim 1

a 45. A breeding system according to ~~any of the preceding claims~~ comprising between 25 and 100.000 animals.

claim 2

a 46. A breeding system according to ~~any of claims 2-45~~, wherein the fenced-in field area is no less than 10 square-meter per animal in the system.

claim 1

a 47. A mud-hole for use in a breeding system as described in ~~any of the preceding claims~~ having such dimensions so that it may contain at least one of said animals and having a design so that said animals are able to enter and leave the mud-hole, the mud-hole being substantially isolated at a lower part from the natural environment with a barrier so as to substantially prevent substances contained in the mud-hole from leaking to the environment.

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a 48. An arrangement for use in a breeding system according to any of claims 1-46 for individual feeding of animals of a herd comprising a plurality of enclosures of a size suitable for comprising one of the animals, each enclosure having an inlet and an outlet and means for selectively switching the inlet and

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outlet between a for the animals passable state and a non-passable state, each enclosure also having a feeding bowl for containing feed, container means for containing a supply of feed, means for leading the feed from the container means to each of said bowls,

5 a common inlet through which the animals may enter into each of the enclosures and means for selectively allowing animals to pass the common inlet, means for directing animals from the common inlet to a specified enclosure selected among the plurality of enclosures, and

10 control means for controlling the operation of the arrangement.

49. An arrangement according to claim 48 and further comprising means for performing a unique identification of each animal of the herd, the means being arranged so as to allow for identification of an animal before letting it into the arrangement.

15 50. An arrangement according to claim 49 wherein the identification means comprises a plurality of transponders each having a unique identification code, each animal of the herd being equipped with a transponder for individual identification, and a transceiver for reading the identification codes of the transponders, the transceiver being arranged near the common inlet so as to allow for identification of an animal before

20 letting it into the arrangement.

a 51. An arrangement according to claim 49 or 50 and further comprising an inlet enclosure of a size suitable for comprising one of the animals, the common inlet forming the inlet of the inlet enclosure, the inlet enclosure having means for selectively allowing an animal

25 within the enclosure to leave the inlet enclosure and having means for determining at least one of the following characteristics of each identified animal passing the common inlet and for transmitting the at least one characteristic to the control means:

a) the weight of the animal,

b) the skin temperature of the animal measured from the infra red radiation from

30 the animal,

c) the body temperature of the animal measured by means of a sensor mounted on the animal, and

d) the thickness of the fat layer on the back of the animal

8-56

claim 49

- a 52. An arrangement according to ~~any of claims 48-54~~ and further comprising means for selectively separating identified animals having passed the common inlet to at least one separation enclosure.

claim 48

- a 53. An arrangement according to ~~any of claims 48-52~~, wherein the plurality of enclosures are arranged on a platform, the arrangement having means for rotating the platform, switching between the passable state and the non-passable state being provided by the rotational movement of the platform.

- 10 54. An arrangement according to claim 53, wherein the opening defining the inlet of each enclosure also defines the outlet of said enclosure.

claim 49

- 15 55. An arrangement according to ~~any of claims 49-54~~, wherein the control means can control the amount of and optionally the type of feed supplied to the individual identified animal.

claim 48

- a 56. An arrangement according to ~~any of claims 48-55~~ and comprising means for adjusting the amount of feed supplied to the individual animal according to the temperature and optionally the wind speed the animals are subjected to.

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claim 48

- a 57. An arrangement according to ~~any of claims 48-56~~, wherein the herd of animals comprises a plurality of porkers.

claim 1

- a 58. A method for use in a breeding system according to ~~any of claims 1-48~~ for feeding 25 porkers of a herd, each porker being uniquely identifiable by means of identification means, comprising the steps of

- 30 identifying one of the porkers and transmitting the identification to a control unit, allowing the porker into a feeding enclosure in which it is the sole porker, determining an individual amount of feed for each porker by means of the control unit,

feeding each porker the determined individual amount of feed when the porker is present within the feeding enclosure, and

allowing the porker to leave the feeding enclosure, wherein each step is controlled by means of the control unit.

59. A method according to claim 58, wherein each porker is equipped with a transponder having a unique identification code and the identification step comprises the step of reading the identification code of the transponder of one of the porkers with a transceiver.

- a 5 60. A method according to claim 58 ~~or 59~~ and comprising the step of determining at least one of the following characteristics of each identified porker and store said determined characteristic(s) in storage means of the control unit:

- a) the weight of the porker,
- b) the skin temperature of the porker measured from the infra red radiation from
10 the animal,
- c) the body temperature of the porker measured by means of a sensor mounted on the porker, and
- d) the thickness of the fat layer on the back of the porker.

- 15 61. A method according to claim 60, wherein at least the weight of the porker is determined and the amount of feed fed to the individual porker is determined from the weight of said porker.

- a 20 62. A method according to ^{claim 58} ~~any of claims 58-61~~, wherein the amount of feed fed to each porker is adjusted for the air temperature and optionally for the wind speed the porkers are subjected to.

- a 25 63. A method according to ^{claim 58} ~~any of claims 58-62~~ and comprising the steps of determining whether an identified porker should be separated from the herd by means of the control unit, and activating separation means by means of the control unit so as to separate said porker into a separation enclosure.

- a 30 64. A method according to ^{claim 61} ~~any of claims 61-63~~, wherein at least a temperature of the identified porker is determined and the separation of the identified porker may be effected in response to the determined temperature of said porker.

- a 65. A method according to ^{claim 58} ~~any of claims 58-64~~, wherein the control unit is at least temporarily connected via a data communication network to a remote surveillance system

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66. A method according to any of claims 58-65, wherein the method is employed with a
5 feeding arrangement according to any of claims 48-57.

67. An arrangement according to ^{claim 70} ~~any of the claims 48-57~~, wherein the control unit is permanently or temporarily connected over a communication network with a surveillance system from which the function of the system may be surveyed and at least partially controlled.

68. An arrangement according to claim 67 wherein different persons or institutions have entrance or partially entrance to the communication network.

15 69. An arrangement according to claim 68 wherein the persons or institutions include one or more selected from the following; one or more farmer(s), one or more controller(s), a veterinarian, one or more investor(s), a slaughterhouse, and food supplier.

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